DOD, Climate Change and Energy Background and Initiatives

Bill Van Houten

Office of the Secretary of Defense

Environmental Management Staff

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WH CC Agenda

- Make the US a leader in climate change
- Ensure 10% of electricity comes from renewable sources by 2012, 25% by 2025.
- Create 5M new jobs by investing $150B over 10 years to catalyze private investment in clean energy technologies.
- LOW CARBON ECONOMY

Atmospheric CO_2 Concentration

Year 2007

Atmospheric CO_2 Concentration:

385 ppm

37% above pre-industrial

Growth in Atmospheric CO_2 Concentrations/Year

1970 - 1979: 1.3 ppm/year

1980 - 1989: 1.6 ppm/year

1990 - 1999: 1.5 ppm/year

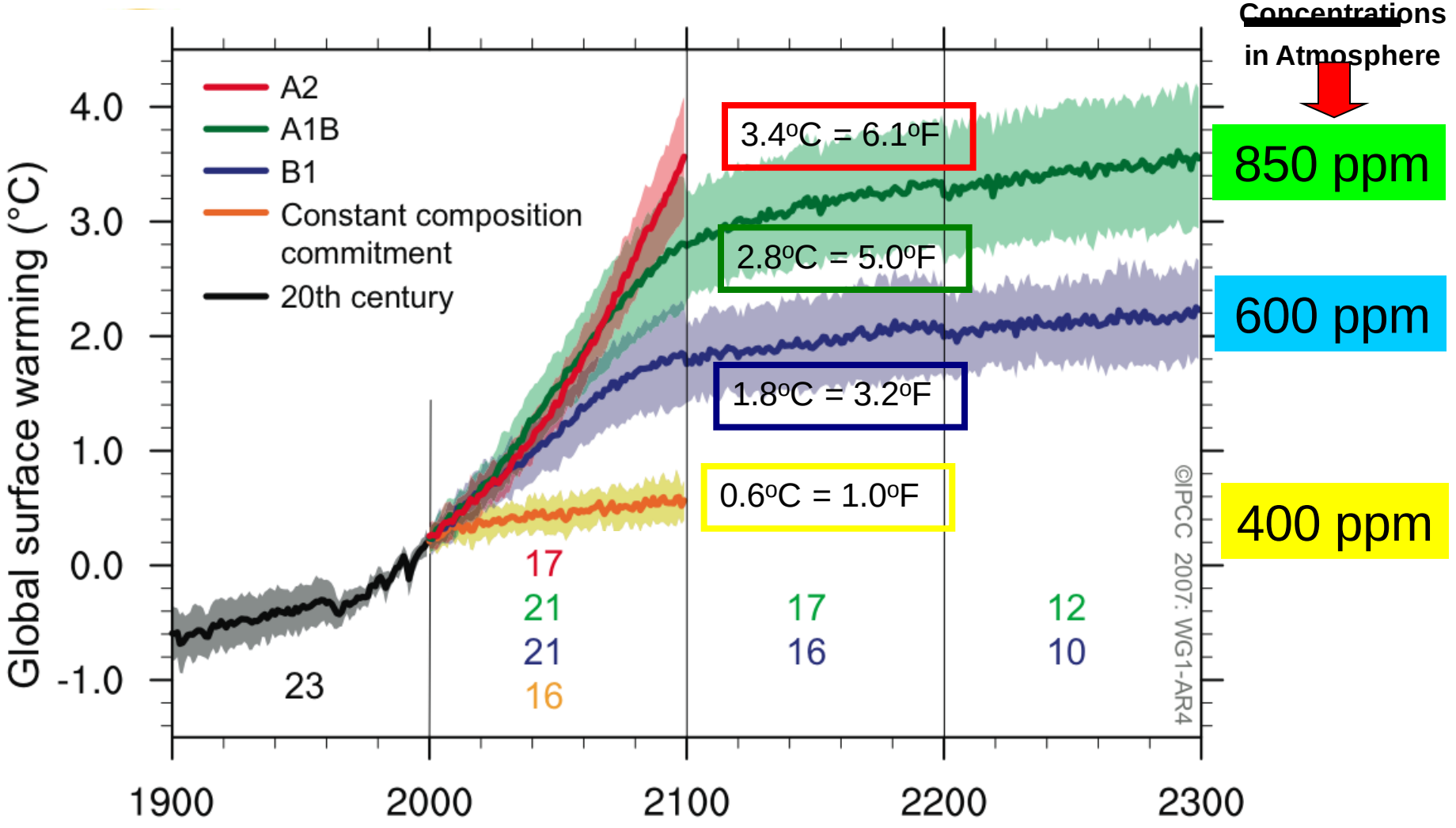
2000 - 2007: 2.0 ppm/year

2007: 2.2 ppm/year

Data Source: Pieter Tans and Thomas Conway, NOAA/ESRL

Temperatures will increase if GHG increase

(2007 IPCC Projections)



CC in the QDR

- Results of the Quadrennial Defense Review
  - Climate Change will play a significant role in shaping the future security environment
  - Climate change will shape the operating environment, roles and mission
  - DoD will need to adjust to the impacts of climate change on our facilities and military capabilities

QDR Continued

- DoD "must complete a comprehensive assessment of all installations to assess the potential impacts of climate change on its missions and adapt as required."
- DoD "is increasing its use of renewable energy supplies and reducing energy demand to improve operational effectiveness, reduce greenhouse gas emissions in support of climate change initiative and to protect the Department from energy price fluctuations."

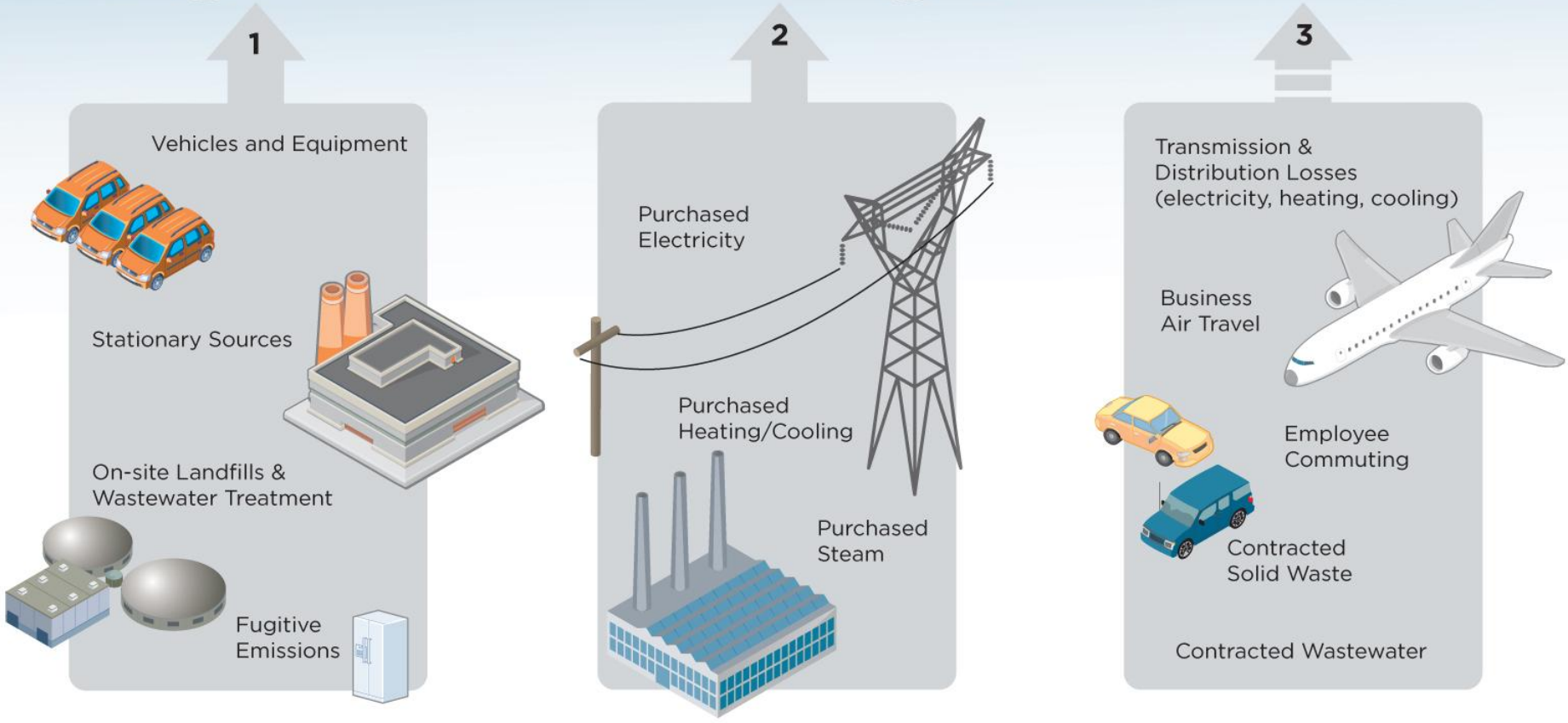
EO 13514

- Issued October 8, 2009
- Title – Federal Leadership in Environmental, Energy and Economic Performance
- Integrated Strategy Toward Sustainability in the FG & Make Reduction of GHG a Priority of Federal Agencies

Measurement

- Section 9 of EO 13514 Requires Recommendations for Comprehensive GHG Accounting and Reporting
- Treatment of Land Use, Sequestration and Agricultural Emissions
- Use of RE Purchases and Offsets
- Methods to Calculate Scope 1, 2, & 3 Emissions

Common Sources of Federal Greenhouse Gas Emissions



SCOPE 1:

Greenhouse gas emissions from sources that are owned or controlled by a Federal agency.

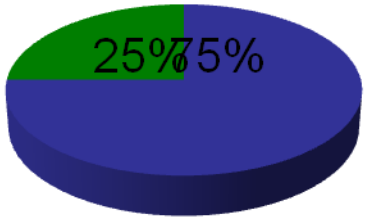
SCOPE 2:

Greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by a Federal agency.

SCOPE 3:

Greenhouse gas emissions from sources not owned or directly controlled by a Federal agency but related to agency activities.

DoD Energy Use



- Mobility (Aircraft, Ships, Vehicles)
- Buildings

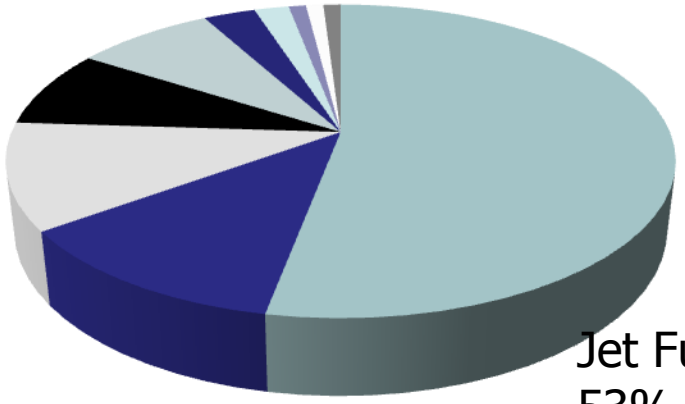
Fuel Oil, Coal, Auto Gas, Other 8%

Natural Gas 8%

Auto Diesel 8%

Marine Diesel 11%

Electricity 12%



Jet Fuel 53%

Source: DoD Annual Energy Management Report (FY 2007) and Mr. Elmer Ransom

Scope 1 and 2

- DoD Established an Aggressive 34% Reduction Target from 2008 to 2020.
- Target Based on Statutory Targets Through 2015 with DoD Goals Through 2020.
- About 2/3 of Reductions Will Come From Reductions in Purchased Electricity.
- Energy Driven Number plus HFC's, etc.

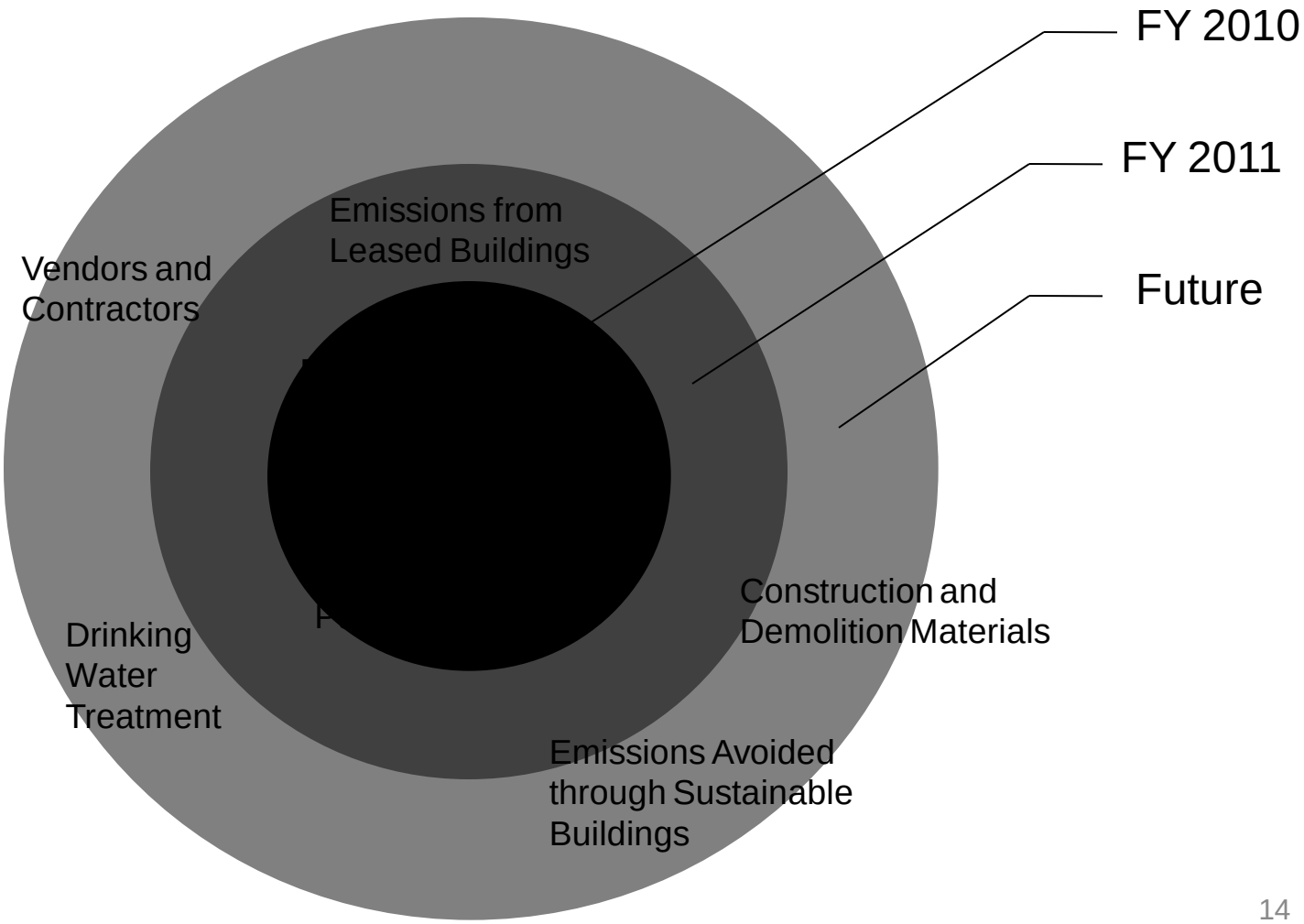
Its Not Just CO2

- Carbon Dioxide 1
- Carbon Monoxide .89
- Methane 21
- Nitrous Oxide 310
- HFC’s 1300
- CF4 6500
- C2F6 9200
- SF6 23000

Scope 3

- DoD Just Sent a 13.5% reduction target to CEQ and OMB for Scope 3 Emissions for 2008 to 2020.
- Three major sources make up this target:
  - Employee Travel – commutes/business
  - Transmission and Delivery Losses
  - Contracted Waste Disposal

Incremental Approach to Scope 3 Emissions



DoD Mitigation

- Mitigation is about more than just energy reduction. We need to address all of the gases.
- Energy Reductions – Demand and Supply
- Methane – Do we know where all of the current and closed landfills are and how much methane they are generating?
- HFC's – Do we need to do another round of substitutions? What about the Montreal Protocol to limit these emissions?

DoD Adaptation

- Do we fully understand the potential impacts to our real estate?
- How should infrastructure planning change?
- How will habitats change? Species migrate? Will invasive species increase?
- What will be the new carrying capacity of facilities?

International Agreements

- Whether there is an international agreement is not critical to whether DOD will have to measure its carbon bootprint, mitigate emissions and adapt.
- Note, However – we are looking to preserve current military exemptions:
  - Bunker fuels, contingency operations as part of UN mandate, emissions in host nations

State Initiatives

- Regardless of science or international picture, DOD needs to prepare for climate change and regulation/legislation.
- State Actions:
  - 19 states have greenhouse gas emission targets.
  - 38 states have CAP's or are developing revising one.
  - Regional Initiatives.

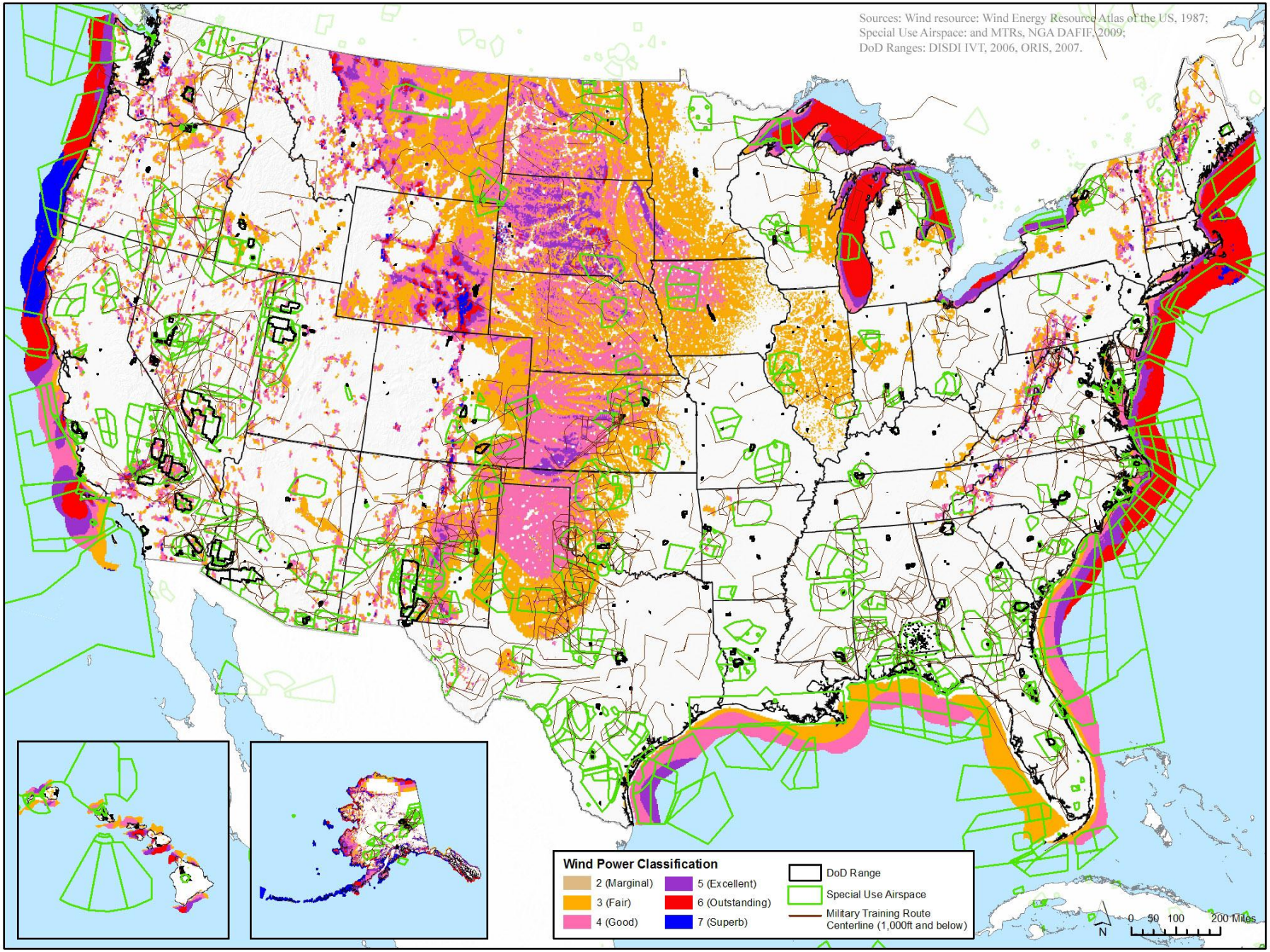
EPA Reporting Rule

- Rule covers CO2, methane, nitrous oxide, hydro fluorocarbons, perfluorocarbons, sulfur hexafluoride and other fluorinated gases including nitrogen trifluoride and hydofluorinated ethers.
- DoD should not be significantly impacted due to the 25000 metric ton CO2 equivalent per year reporting threshold and the rule's definition of a facility.

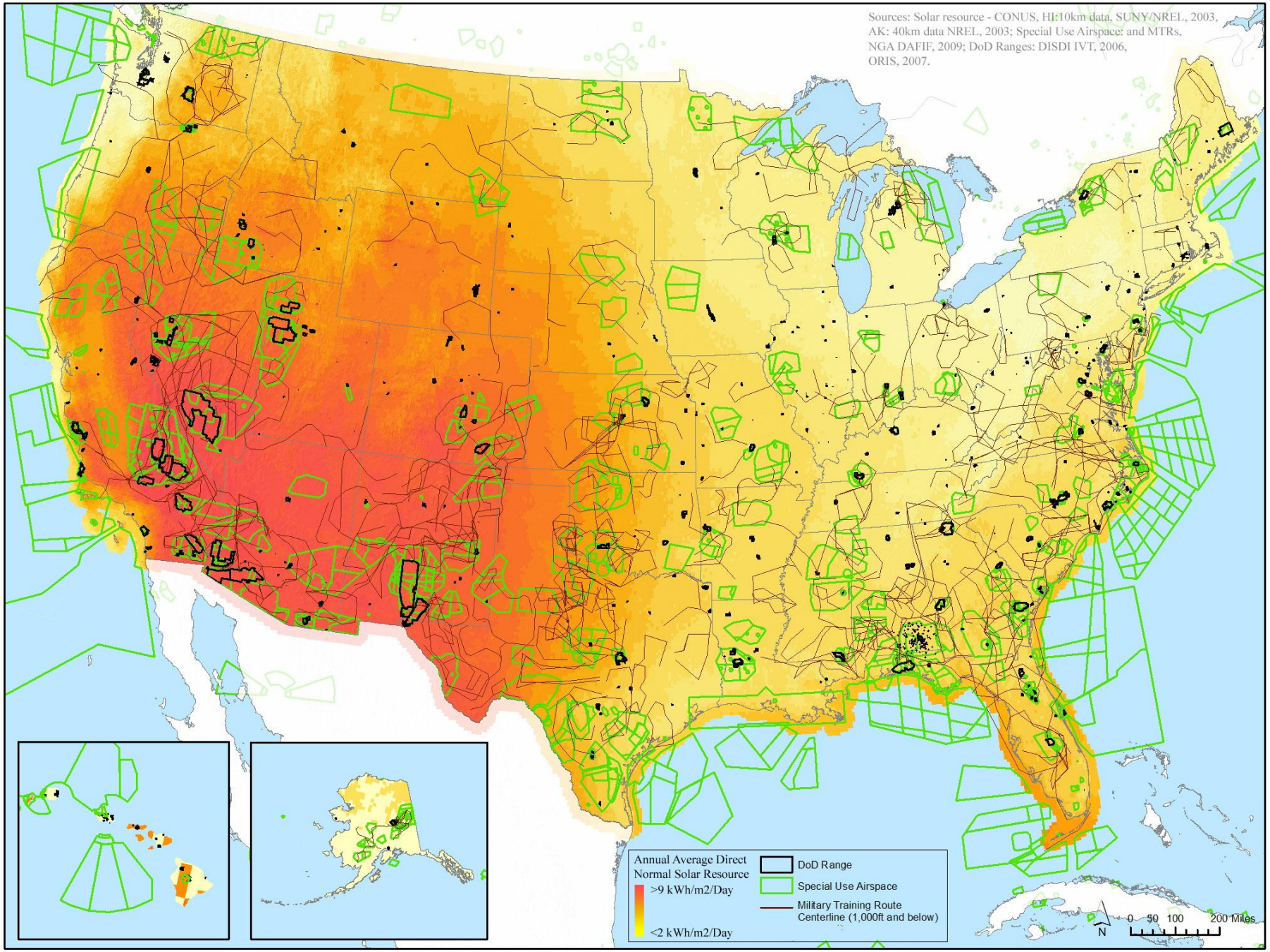
Energy Compatibility

- US energy security and GHG reduction targets drive the need for renewable energy sources on and off installations, but there are both obstruction and radar disruption issues.
- DoD must not self-encroach.
- Issues concerning development on Withdrawn Land.

U.S. Wind Resource and DoD Ranges and Special Use Airspace



U.S. Solar Resource and DoD Ranges and Special Use Airspace



Interagency Cooperation

- **Outer Continental Shelf – DoD & DoI MoA**
  1983, update in progress
- **West-wide Energy Corridors PEIS - 2006**
- **BLM & DoD Wind Energy Protocol – 2008**

Point of Contact
DoD Renewable Energy Policy

For questions about renewable energy project compatibility with DoD testing, training, and operations or climate change:

Mr. William Van Houten, Energy Infrastructure Compatibility
Tel: 703-571-9068
E-mail: *william.vanhouten@osd.mil*